

REMARKS

The Office Action dated January 29, 2003 has been fully considered by the Applicant. The Examiner has set forth a restriction requirement identifying five inventions:

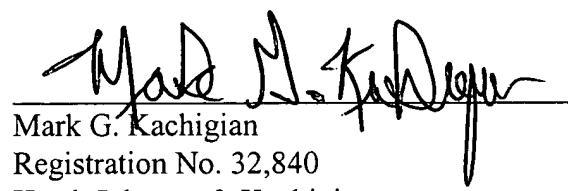
- (I) Claims 1-3, 11-13, and 19-22 (method for suppressing a disease caused or enhanced by effects of intracellular iron mismanagement using ferritin-H protein);
- (II) Claims 1, 4, 11, 14, 19 and 21 (method for suppressing a disease caused or enhanced by effects of intracellular iron mismanagement by inducing expression of an endogenous ferritin gene);
- (III) Claims 1, 5, 6, 11, 15, 16, 19, 21 (method for suppressing a disease caused or enhanced by effects of intracellular iron mismanagement by repressing the expression of the ferritin-L or derivatives using an antisense DNA in vivo);
- (IV) Claims 1, 7, 8, 10, 11, 17, 18, 19, 20, 21 and 23 (method for suppressing a disease caused or enhanced by effects of intracellular iron mismanagement by introducing a nucleic acid vector encoding a ferritin-H protein in vivo); or
- (V) Claims 1, 7, 9-11, 17-19 and 21 (method for suppressing a disease caused or enhanced by effects of intracellular iron mismanagement by first introducing a nucleic acid vector encoding ferritin-H protein ex vivo to a cell).

The restriction requirement is respectfully traversed. It is believed that the claims could easily be considered at the same time. Notwithstanding the foregoing, Applicant elects Claims 1 through 3, 11 through 13 and 19 through 22 for a pharmaceutical composition and a method for suppressing a disease caused or enhanced by effects of intracellular iron mismanagement using ferritin-H protein.

Applicants' election is without prejudice to its right to file divisional applications as to the remaining claims.

It is believed that the application is now in condition for allowance and such action is earnestly solicited.

Respectfully submitted,



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Clean copy of Pending Claims:

- 1 1. A method for suppressing disease caused or enhanced by effects of intracellular iron
2 mismanagement comprising:
 - 3 increasing the intracellular amount of at least one ferritin-H or a derivative thereof
4 to an effective level.

- 1 2. The method for suppressing disease of Claim 1 wherein exogenous ferritin-H or
2 derivative thereof is introduced into globin-producing cells.

- 1 3. The method for suppressing disease of Claim 1 wherein the globin-producing cells
2 are fused with liposomal constructs containing ferritin-H or derivative thereof.

- 1 11. A method for treating sickle cell disease comprising:
 - 2 suppressing the expression of adult β -globin genes in globin-producing cells with
3 ferritin-H or a derivative thereof.

- 1 12. The method for treating sickle cell disease of Claim 11 wherein exogenous ferritin-H
2 or a derivative thereof is introduced into globin-producing cells.

- 1 13. The method for treating sickle cell disease of Claim 12 wherein the globin-producing
2 cells are fused with liposomal constructs containing ferritin-H or a derivative thereof.

1 19. The method for treating sickle cell disease of claim 11 wherein the ferritin-H or
2 derivative thereof binds to the promoter region of the β -globin gene.

1 20. A method for treating sickle cell disease comprising:
2 administering to a patient a ferritin-containing vehicle in a pharmaceutically
3 acceptable carrier, said vehicle targeting hematopoietic stem cells, erythroid precursor cells or,
4 hematopoietic cells.

1 21. A method for treating neurological disorders caused or enhanced by excess
2 intracellular iron, the method comprising:
3 increasing the intracellular amount of ferritin-H or a derivative thereof in affected
4 neural cells to an effective level.

1 22. A pharmaceutical composition comprising
2 ferritin-H or a derivative thereof; and,
3 a cell specific targeting ligand.